

## WHAT IS CLAIMED IS:

1. A method of forwarding packet calls in mobile communication system, comprising:

determining whether a called subscriber is a subscriber of a call-forwarding service and has set up a call-forwarding unconditional function in response to a packet call set-up request; and

setting up a packet call directed to an IP address of the called subscriber for forwarding to a forward-to address based on a result of said determining step.

2. The method of claim 1, further comprising: registering the call forwarding service by adding a parameter having forwarding information to packet service subscriber data transmitted from an HLR to an SGSN when the HLR changes the subscriber information stored in a database of the SGSN.

3. The method of claim 1, wherein the determining step is performed at an HLR that received a called subscriber routing information request.

4. The method of claim 1, further comprising when the called subscriber is determined to have subscribed to the call forwarding service and set up the call-forwarding unconditional function: transmitting from an HLR to a Gateway General Packet Radio Service (GPRS) Service Node (GGSN) first routing information for setting up the packet

call directed to the IP address of the called subscriber and forwarded to the forward-to address.

5. The method of claim 4, wherein the first routing information includes forwarding information, in a case where the called subscriber subscribes to the call forwarding service.

6. The method of claim 2, wherein the forwarding information includes forward-to IP address information.

7. The method of claim 5, wherein the forwarding information includes forward-to IP address information.

8. The method of claim 2, wherein the forwarding information includes at least one of a previously designated URL address, a certain server address and another mobile station address.

9. The method of claim 5, wherein the forwarding information includes at least one of a previously designated URL address, a certain server address, and another mobile station address.

10. The method of claim 1, wherein the setting up step comprises:

transmitting first routing information including forwarding information from a first HLR to a GGSN;

determining a second HLR for setting up the packet call forwarded to another mobile station by checking forwarding information from the received first routing information; and

setting up the packet call, forwarded to another mobile station registered by the called subscriber, according to second routing information received from the second HLR.

11. The method of claim 1, wherein the setting up step comprises:

transmitting first routing information including forwarding information from a first HLR to a GGSN; and

checking forwarding information from the received first routing information, wherein in a case where setting up the packet call forwarded to another mobile station is impossible according to a result of said checking step, setting up a forwarded packet call by routing the packet call using an internet network according to the received forwarding information.

12. A method of forwarding packet calls in mobile communication system, comprising:

receiving routing information of a called subscriber according to a packet call set-up request; and

paging a mobile handset of the called subscriber; wherein when no response is received from dais paging, determining whether the called subscriber subscribes to a call

forwarding service and then either stopping a packet call set-up trial or setting up a packet call directed to an IP address of the called subscriber and forwarded to a forward-to address.

13. The method of claim 12, further comprising: registering the call forwarding service by adding parameter having forwarding information to packet service subscriber data transmitted from an HLR to an SGSN when the HLR changes the subscriber information stored in a database of SGSN.

14. The method of claim 12, wherein the determining step is performed at an SGSN which pages a mobile handset of the called subscriber.

15. The method of claim 12, wherein when the called subscriber subscribes to the call forwarding service, an SGSN transmits to a GGSN information including forwarding information for setting up a packet call directed to an IP address of the called subscriber and forwarded to forward-to address.

16. The method of claim 15, wherein the information including forwarding information includes a forward-to IP address information.

17. The method of claim 15, wherein the information including forwarding information includes at least one of a previously designated URL address, a certain server address, and another mobile station address.

18. The method of claim 15, wherein the information including forwarding information comprises information indicating that there is no response from the called subscriber, when the called subscriber is a subscriber of the call forwarding service.

19. The method of claim 12, wherein the setting up step comprises:  
transmitting information including forwarding information from an SGSN to a GGSN according to a result of the determination step; and  
setting up a packet call forwarded to another mobile station by checking forwarding information from the received information including forwarding information.

20. The method of claim 12, wherein the setting up step comprises:  
transmitting information including forwarding information from an SGSN to a GGSN according to a result of the determining step; and  
checking forwarding information from the received information including forwarding information; wherein  
in a case where setting up a packet call forwarded to another mobile station is impossible as determined from a result of the checking step, setting up the forwarded packet call by routing the packet call using an internet network according to the received forwarding information.

21. A method for processing calls in a mobile communications system, comprising:

receiving a call directed to an IP address of a mobile terminal subscriber; and  
forwarding the call to a forwarding address of the mobile terminal subscriber.

22. The method of claim 21, wherein the forwarding address is a different IP address of the mobile terminal subscriber.

23. The method of claim 21, wherein the forwarding address is one of a predetermined URL address, a predetermined server address, or an address corresponding to another mobile terminal.

24. The method of claim 21, wherein the forwarding step is performed unconditionally.

25. The method of claim 21, further comprising:  
sending a paging signal the mobile subscriber terminal,  
wherein the forwarding step is performed only when no response is received from the paging signal.

26. The method of claim 21, further comprising:

determining whether the mobile terminal subscriber is a subscriber of a call-forwarding service, wherein the forwarding step is performed based on a result of the determining step.

27. The method of claim 26, further comprising:

determining a type of call-forwarding service of the mobile terminal subscriber; and  
forwarding the call based on the type of call-forwarding service.

28. The method of claim 27, wherein the type of call-forwarding service is one where calls are unconditionally forwarded to the forwarding address.

29. The method of claim 28, wherein the type of call-forwarding service is one where calls are forwarded to the forwarding address after no response has been received from a paging signal for a predetermined period of time.

30. A system for managing calls in a mobile communications system, comprising:  
a receiving unit which receives information indicating that a call directed to an IP address of a mobile terminal subscriber has been received; and  
a control system which forwards the call to a forwarding address of the mobile terminal subscriber.

31. The system of claim 30, wherein the forwarding address is a different IP address of the mobile terminal subscriber.

32. The system of claim 30, wherein the forwarding address is one of a predetermined URL address, a predetermined server address, or an address corresponding to another mobile terminal.

33. The system of claim 30, wherein the forwarding step is performed unconditionally.

34. The system of claim 30, further comprising:  
a paging unit which sends a paging signal the mobile subscriber terminal, wherein the control system forwards the call to the forwarding address only when no response is received from the paging signal.

35. The system of claim 30, wherein the control system determines whether the mobile terminal subscriber is a subscriber of a call-forwarding service and forwards the call based on a result of the determination.

36. The system of claim 35, wherein the control system determines a type of call-forwarding service of the mobile terminal subscriber and forwards the call based on the type of call-forwarding service.



37. The system of claim 36, wherein the type of call-forwarding service is one where calls are unconditionally forwarded to the forwarding address.

38. The system of claim 37, wherein the type of call-forwarding service is one where calls are forwarded to the forwarding address after no response has been received from a paging signal for a predetermined period of time.